

## **CLAIMS**

What is claimed is:

1. A fuel supply assembly for a gasoline fueled engine including a combustion chamber for combusting fuel, and an exhaust for the combusted fuel, which  
5 assembly comprises:
  - a vaporizing tank, a quantity of liquid gasoline fuel contained in the tank, a heating source for heating the fuel, and a temperature control for controlling the temperature of the liquid gasoline fuel as contained in the tank;
  - 10 said temperature control maintaining the temperature of the liquid gasoline fuel to produce vaporization of the fuel which rises from the surface of the liquid, a conduit arrangement conveying the vaporized gasoline fuel from the tank, a primary source of ambient air mixed with the vaporized gasoline fuel conveyed by said conduit arrangement and said conduit arrangement conveying the intermixed ambient air and vaporized fuel to the engine for combustion; and  
15 an automatic control monitoring the engine exhaust and controlling the intermixing of the ambient air and vaporized gasoline fuel to maintain a desired hydrocarbon level in the exhaust.
2. A fuel supply assembly as defined in Claim 1 wherein a secondary source of the ambient air is directed into and through the tank for collecting and conveying  
20 an enriched vaporized air and fuel mixture into the conduit to be thereafter combined with the primary source of ambient air.
3. A fuel supply assembly as defined in Claim 2 wherein a valve is provided for one or both of the primary source of ambient air and enriched vaporized gasoline fuel and air mixture, said one or both valves controlling the intermixing of said  
25 primary ambient air and vaporized gasoline and air mixture.
4. A fuel supply assembly as defined in Claim 3 wherein said control comprises a sensor sensing combustion exhaust of said engine for determining the presence of hydrocarbons in said exhaust, said valve responsive to said sensor for modifying said intermixing and to thereby maintain a desired content of  
30 hydrocarbons in said exhaust.

5. A fuel supply assembly as defined in Claim 4 wherein said sensor senses  $O^2$  emissions and said control determines the hydrocarbons based on the  $O^2$  emissions.
6. A fuel supply assembly as defined in Claim 2 wherein a baffle arrangement in  
5 the tank directs air from said secondary source over the surface of the liquid fuel for stabilizing the temperature of said air as the air collects and conveys the vaporized fuel.
7. A fuel supply assembly as defined in Claim 1 wherein said fuel source assembly is provided as an alternate fuel source to said engine.
- 10 8. A fuel supply assembly as defined in Claim 7 wherein the fuel as vaporized produces a residual fuel portion and a control for selectively providing vaporized fuel or a liquid fuel to the combustion chamber, said residual fuel conveyed to said combustion chamber as liquid fuel.